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EXAMINER

AFTERGUT, J

ART UNIT

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/057,406

Applicant(s)
Werenicz et al

Examiner
Jeff H. Aftergut

Group Art Unit
1733



☒ Responsive to communication(s) filed on Aug 15, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-12, 33-42, 44, and 47-55 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-12, 33-42, 44, and 47-55 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-6, 8-12, 33-42, 44, 46, 49, 50, 52, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cardinal et al (the article submitted by applicant entitled A New Cost Effective Method to Confer Tailored Breathability and Liquid Barrier Properties to Nonwovens”) in view of Skelton et al and Morman et al (newly cited) optionally further taken with Bunnelle et al.

Cardinal et al, Skelton et al, and Bunnelle et al are all cited for the same reasons as set forth in paper no. 16. The reference to Cardinal et al taught the use of Hytrel for the polymer material being extruded and gave one example of the Hytrel material (Hytrel G-3548). The applicant submitted a declaration with the response dated 8-15-00 from Dr. Polance which indicated that the viscosity of this Hytrel polymer was 2677 at 240 degrees C. The applicant also amended the claims to recite that the viscosity was measured at operating temperature (the extrusion temperatures employed). The applicant also tested Hytrel HTR-8206 (but there appears to be no specific reason as to why this polymer was tested). The applicant is advised that the Hytrel which was a hot melt adhesive which was employed in the operation of Cardinal would have included the Hytrel 4056, of Skelton (who expressly stated that this form of Hytrel was a hot melt adhesive). The applicant performed no test of the viscosity of the Hytrel 4056 at operating

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appreciated that the viscosity of the Hytrel materials employed would have been optimized in order to facilitate flow of the same through the die and form a uniform film at the exit of the die suitable for lamination with the nonwoven web in Cardinal et al (and it is believed to be well within the skill level of the ordinary artisan to optimize the viscosity conditions employed to achieve the desired flow properties of the polymer at the exit of the die, during processing) . The reference to Bunnelle suggested that one skilled in the art would have spaced the hot melt adhesive die from the substrate. To further evidence that the viscosity of Hytrel 4056 material would have been within the specified range, the newly cited reference to Morman et al is being made of record (Morman et al was discussed during the course of the interview with applicant's representative dated 8-8-00).

Morman et al taught that Hytrel 4056 had a viscosity during operating conditions of between 100-1000 poise, see 1-22 of the patent. The operating conditions were the viscosity was measured were the capillaries of an extrusion die during the extruding operation under the extruding conditions. The reference taught that one was forming a nonwoven material from the extruded Hytrel 4056, however, the reference is not being cited for the particular material being produced but rather was being cited to show that Hytrel 4056, when extruded, typically had a viscosity of between 100-1000 poise. The applicant is advised that this reference is being cited in direct response the amendment (which required that the viscosity be measured at operating conditions) and the newly submitted declaration (which inferred that Hytrel would not have had a viscosity within the specified ranges when extruded). Because it would have been an intrinsic

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property of Hytrel 4056 (and because such Hytrel materials were known to have been useful in extrusion of hot melt films), it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a Hytrel 4056 polymer for extrusion to bond to a nonwoven substrate as such was a common Hytrel hot melt material readily available to the ordinary artisan as evidenced by Skelton and wherein such material would have had a viscosity within the specified ranges as set forth by Morman et al in the process of extruding a Hytrel film upon a nonwoven substrate to form a water impermeable and vapor permeable film upon the substrate as suggested by Cardinal et al. As to the reference to Bunnelle, the reference is cited herein for the same reasons as specified in paper no. 16 and no additional obviousness statement is being made herein (see paper no. 16 for a discussion of this additional reference). It should be noted that the application of a film having a thickness of 25 microns would have equated to a coverage of polymer material of about 23 g/square meter of polymer. The reference to Cardinal suggested that these films would have been down gauged to between 5-20 microns which clearly suggested a coat weight of less than 20 g/square meter (see applicant's specification on page 8, lines 9-19). Additionally, it should be noted that the thickness of the conventional barriers were known to have been a thickness of 75 microns which resulted in a coat weight of 70 g/square meter.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with E.P. 295,694 for the same reasons as expressed in paper no. 16, paragraph 8.

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4. Claims 47-51, 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with the applicant's admitted prior art (and/or the state of the prior art at the time of the invention).

While the references as set forth above formed a breathable/ water impermeable coating upon the nonwoven for purposes of manufacturing a disposable absorbent article utilizing a Hytrel polymer (such as Hytrel 4056), the references failed to teach that the polymer employed as a polyolefin material or that the material produced a film which was water soluble and/or biodegradable. However, the ordinary artisan was well aware of such materials in the hot melt industry as suggested by the applicant's admitted prior art. More specifically, commercially available and readily employed hot melt adhesives were known to have included a tackifier, a plasticizer and a polymer resin (these are the three components required of a hot melt adhesive as was conventionally known in the art and the specific amounts of each component would have been determined through routine experimentation to have been amounts which were conventionally utilized. Note that the applicant has admitted that conventional hot melts "typically" included a tackifier, a plasticizer and a thermoplastic polymer (and the determination of the specific amounts of the same components would have been determined through routine experimentation and would have certainly included amounts of plasticizer, tackifier, and polymer which were commercially available). The applicant's themselves utilized block copolymers (such as the Hytrel materials discussed above) and alternatively suggested that other useful hot melt materials would have included commercially available hot melts such as ethylenic copolymers like

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ethylene vinyl acetate. Additionally, polymers of hot melts compositions which were water soluble and saline insoluble were known to have been commercially available at the time the invention was made (such as materials like EASTMAN AQ 1350). Because the reference to Cardinal was clearly concerned with the attachment of the hot melt composition to a nonwoven in the manufacture of an absorbent article (as was Bunnelle), and because such water solubility would have provided the assembly with the ability to be biodegradable (which is a recognized problem in the landfills which are increasingly getting filled with disposable absorbent articles), it would have been within the purview of the ordinary artisan to select thermoplastic hot melt materials which were biodegradable (where such materials were known as evidenced by applicant's admitted prior art). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select suitable polymer materials from those which were commercially available as evidenced by applicant's admitted prior art (as well as the known state of the prior art at the time the invention was made) in order to produce a product with the desired characteristics in the process of extruding a film upon a nonwoven substrate as set forth above in paragraph 2.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 49-51 and 55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 49, line 1, the claim depends upon claim "49". A claim cannot depend upon itself and it is not clear which claim applicant intended claim 49 to depend from.

In claim 55, line 10, the language "such that filaments and fibers of the substrate surface do not penetrate said continuous film" appears. This language lacks proper antecedent basis because the substrate surface has never been stated to have been one which included protruding fibers and/or filaments therefrom, i.e. a nonwoven web. It is suggested that applicant clearly define that the substrate onto which the film was contacted upon included fibers and filaments on its surface.

Response to Arguments

7. Applicant's arguments filed 8-15-00 have been fully considered but they are not persuasive.

The applicant arguments relating to the reference to Boger have been carefully considered and the arguments relating to this rejection have been found persuasive. However, the applicant's arguments relating to the rejection based upon Cardinal et al have also been carefully considered and these arguments have not been found to be persuasive for the reasons discussed in greater detail below.

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The applicant has attempted to take the position that the viscosity of the film grade polymers of Hytrel employed in Cardinal et al were not of a viscosity (the viscosities of the same were too high) within the claimed range of viscosities useful in the claimed invention. This has not been found to be persuasive. To begin with, it is not completely clear why the applicant has chosen to select Hytrel HTR-8206 as one of the polymers tested in the declaration. The other Hytrel polymer tested (Hytrel G-3548) was mentioned in Cardinal et al reference. The declarant seems to have tested what he believes to be the film grade Hytrel materials available, however, there is no mention in Cardinal et al of using "film grade" Hytrel. In fact the reference seemed to suggest that the process would have been suitable with any form of Hytrel material available which was a polyester block copolymer which included both hard and soft segments which was capable of being tailored to achieve the desired properties of material. The applicant is advised that the reference suggested that one skilled in the art would have been able to tailor the properties of breathability and moisture impermeability of the polymer to the desired end results. Therefore, while the reference employed Hytrel G-3548 in the coextrusion example, there is no reason to believe that the reference was limited to the same.

The applicant is advised that one would have understood in light of the reference to Skelton that other Hytrel polymers were commercially available in the form of a hot melt adhesive. Note that in Cardinal et al the reason that the reference provided for coextrusion with an ethylene vinyl acetate polymer was to achieve better adhesion with the non-woven material. One would have thus been motivated to select a Hytrel polymer composition which was adhesive.

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Clearly the Hytrel hot melt compositions of Skelton (and in every example where Hytrel was used in Skelton the form of Hytrel was Hytrel 4056) would have been a suitable commercially available form of Hytrel which one viewing the reference to Cardinal et al would have found suitable for the processing described therein because it was an adhesive material (one would have expected better adhesion with a hot melt adhesive Hytrel composition than with a non-adhesive Hytrel composition). Additionally, the reference to Bunnelle evidenced that one skilled in the art knew to extrude a hot melt composition which included a block copolymer composition upon a substrate in the manufacture of an absorbent article (personal hygiene article). Clearly, the use of Hytrel 4056 in the operation of Cardinal would have been within the purview of the ordinary artisan in light of the evidence of record.

The declarant failed to test the viscosity of Hytrel 4056 under the conditions the material was exposed to during the extrusion operation. The reference to Morman et al evidenced that Hytrel 4056 under the extrusion conditions (as measured at the outlet of an extrusion device within the capillary of the same) had a viscosity between 100-1000 cps. This reference was shown to applicant's representative at the interview dated 8-8-00, to which applicant's representative indicated that the reference related to the extrusion of meltblown nonwoven webs of the elastic Hytrel 4056. In response to the same it should be noted that: (1) the reference is not being cited for the processing of the polymer material to form a film from the same and laminate the film to the nonwoven, such processing of Hytrel was suggested by Cardinal et al but rather the reference was cited to show a physical property of Hytrel 4056 which is intrinsic to the material regardless

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of whether one is extruding fibers or extruding a film of the material, and; (2) the reference to Bunnelle desired to extrude an elastic material in the form of a film and laminate the same to a web outside of the die and the reference to Mormon et al clearly characterized the polymer Hytrel 4056 as an elastic polymeric material (again a characteristic of Hytrel 4056 which is intrinsic to the polymer regardless of whether one formed a film or a nonwoven web from the polymer). Clearly, the reference to Morman evidenced that one skilled in the art employing Hytrel 4056 as the Hytrel polymer in Cardinal would have produced a film from a polymer which had the same rheological properties as claimed.

The applicant argues that film layer of Cardinal can be down gauged to between 5-20 microns but that the film thickness being extruded was 25 microns in thickness. The applicant is advised that the claims at hand do not specify a thickness for the film (other than claim 44) and the thicknesses which applicant attempts to attain were for the purpose of providing a low coat weight (on the order to 20 g/square meter). The claims do not exclude dawn gauging the film prior to the lamination operation. Additionally, as discussed above, thicknesses of 5-20 microns would have provided one with the specified coat weight. Finally, the prior art knew it was desirable to coat films having a thickness of 75 microns in the manufacture of a liquid barrier as admitted by applicant on page 8, lines 10-19 of the specification.

Regarding Bunnelle, the applicant argues that the web issuing from the extruding device was not "suspended" because it "almost immediately" came into contact with the chill roll. Certainly, because it did not immediately come into contact with the chill roll, there is a gap

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between the slot and the chill roll. Additionally the statements made were only with regard to Figure 1 and Figure 2 was the embodiment relied upon by the Office. The applicant is advised that the spacing employed in their invention was a space of .5-20 mm (and a distance of .5 mm would have certainly fallen within the scope of almost immediately). Bunnelle did not evaluate the rheological properties of the material, but as addressed above the Hytrel 4056 material employed by the prior art would have had the specified properties.

Regarding Skelton et al, the applicant argues that the reference has nothing to do with film forming. The applicant is advised, as addressed above, that one would have understood Skelton would have been useful as it described suitable Hytrel polymeric materials commercially available for use in the operation of Cardinal wherein one would have been motivated to select such Hytrel because of its adhesive properties. The reference was not relied upon for any processing but rather to evidence that Hytrel 4056 was commercially available and that the same was a hot melt material useful commercially.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Aftergut whose telephone number is (703) 308-2069.

JHA
October 12, 2000


JEFF AFTERGUT
PRIMARY EXAMINER
ART UNIT 1733